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Mulla Sadra and the mind-body problem: A critical assessment of Sadra's approach to the dichotomy of soul and spirit

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Chapter three: Motion

3.1. Introduction

The issue of motion is one of the most complex subjects in Islamic philosophy. Muslim philosophers before Mulla Sadra denied motion in substances, as accepting this kind of motion created certain problems for them which they were not able to solve.¹ Sadra however tried to solve those problems faced by other philosophers and justify his idea (The problems and Sadra's solutions will be mentioned in this chapter). As a result it became a basis for the knowledge of many things concerning the reality of the world and concerning the human soul as a part of the material world. In this chapter we will consider motion in general. The issue of motion in general provides an introduction for understanding trans-substantial motion and therefore understanding motion in the soul's substance. Without understanding the soul and its trans-substantial motion we are not able to make a true judgement between Mulla Sadra's idea which claims that the soul has trans-substantial motion and the ideas of other philosophers who totally deny trans-substantial motion and therefore deny trans-substantial motion of the soul.

The main topics in this chapter are: philosophers' ideas about change and constancy, reality of time, issues related to time and issues unrelated to time, types of motion, substances (*jawāhir*) and accidents (*'a'rāḍ*), the types of categories (*maqūlāt*), prerequisites of motion and the relation between time and motion. This chapter and Chapter Two provide an introduction to trans-substantial motion which we will discuss in Chapter Four. The aim of all three chapters is to understand the question: Does the human soul have motion and, if so, what kind of motion does it have? Another question is: What level can that human soul reach with its motion and what are the evidences for that?

Finally, as this writer believes, every human possesses a soul and a spirit and it is by the spirit accompanying the soul that human can reach these levels. If the soul does

¹ See Chapter Two, ref No. 25.

not have a spiritual model beside it, it will not be able to reach an equal level to the spirit i.e. a level of becoming immaterial and crossing this material world. We will try to prove this statement in Chapters Five and Six.

3.2. Constancy and change

As far as the history of western philosophy shows, some western philosophers believed in the notion of constancy and others in the notion of change. Some totally denied any changing in the external world, whereas others denied any constancy. Many others accepted both change and constancy². Now the main question is: Which one of these ideas is acceptable, constancy or change? Considering the ideas of these philosophers may give us a reliable answer to this question.

3.2.1. Philosophers who believed in absolute constancy

Parmenides denied the existence of changes.³ He believed that the real world is immovable and there is no change and all the changes that we can see in the external world are created by our mind and have no external reality⁴. However, this idea denies all changes like: reproduction, feeding, breathing, growth, evolution,

² R. H. Popkin and A. Stroll, *Kolīyyāt-i falsafī*, translated by Jalāl al-Dīn Mujtabawī, Hikmat Publications, Tehran, 1374 SH, pp. 144-151.

Motahari, *Majmū'a-i āthār*, Vol. 13, pp. 185-190; and, pp. 877-882.

³ Parmenides of Elea (Greek: born c. 515 BC) was an ancient Greek philosopher born in Elea, a Greek city on the southern coast of Italy. He was the founder of the Eleatic school of philosophy. The single known work of Parmenides is a poem which has survived only in fragmentary form. In this poem, Parmenides describes two views of reality. In *the way of Truth* (a part of the poem), he explains how reality is one, change is impossible, and existence is timeless, uniform, and unchanging. In *the way of Opinion* he explains the world of appearances, which is false and deceitful. These thoughts strongly influenced Plato, and through him, the whole of western philosophy.

Austin, Scott (2007) *Parmenides and the History of Dialectic: three Essays*, Parmenides Publishing, ISBN 978-1-930972-19-3.

⁴ F. Copleston, *A History of Philosophy*, translated by Jalāl al-Dīn Mujtabawī, Tehran, 1362, vol. 9, P 70.

erosion and senility, death and defeat. In short this idea denies all change and replacement.

3.2.2. Philosophers who Believed in Change

Heraclitus was a member of the group that believed all things are changing⁵. He believed that there is only one stable thing in the world and that is the principle that "all things are constantly changing".⁶ This idea is not acceptable either, because change exists in the world like a piece of wood changing into ashes, but according to this idea we cannot justify any change because the meaning of change from A to B is not that A was totally nothing and B was created without antecedent. In our example we can say this ash now is the same as that wood before, and that wood before is the same as this ash now. It is clear that the result of this sentence is that we need a common factor (*al-'amr al-mushtarak*) between the wood and the ash which must remain in the ash. In conclusion we need the following three things for any change to happen (these are common between all Muslim philosophers):

- 1- Every change requires two things: differentiation (*al-'amr al-ghayr al-mushtarak*) and identity (*al-'amr al-mushtarak*).
- 2- Identity needs a common factor between the original and its product after the change.

⁵ Heraclitus of Ephesus (ca. 535-475 BC) was a pre-Socratic Greek philosopher, a native of Ephesus, Ionia, on the coast of Asia Minor. Heraclitus is known for his doctrine of change being central to the universe and that the Logos is the fundamental order of all. The main source for the life of Heraclitus is Diogenes Laertius. Some have questioned the validity of the anecdotes based on political or social conjecture; however, there is no solid scholarship refuting them. Heraclitus was born in an aristocratic family in Ephesus, present-day Efes, Turkey. Ephesus had been part of the Persian Empire since 547 and was ruled by a satrap. Diogenes says: "As to the work which passes as his, it is a continuous treatise *On Nature*, but is divided into three discourses, one on the universe, another on politics and a third on theology. Theophrastus says (in Diogenes)" ... some parts of his work are half-finished, while other parts make a strange medley.

Bakalis, Nikolaos (2005). *Handbook of Greek Philosophy: from Thales to the Stoics: analysis and Fragments*. Trafford Publishing, pp. 26-45 under Heraclitus. ISBN 1-4120-4843-5.

⁶ Copleston, *A History of Philosophy*, vol. 1, pp. 39, 59.

- 3- This common factor must be fixed from the original until the end of the change. So, every change needs a stable thing and change has no meaning without this stable thing⁷.

Therefore the process of changing, which there is a lot of in the external world, is not complete without a stable substratum. Therefore, according to philosophers who are introduced in the following sections, it cannot fully prove change or constancy and to justify the changes in the natural world we have to accept both constancy and change.

3.2.3. Aristotle's Thoughts on Constancy and Change

With due attention to the difficulties with which philosophers were faced, after Parmenides' idea of pure constancy and Heraclitus's idea of pure change philosophers accepted both of these ideas. Aristotle was one of the philosophers who believed in both constancy and change. According to Aristotle, in each change, for example change of A to B, something, such as C, remains unchanged which was in both A and B. Relying on this common factor (C) we can say that "this B now is the same as A" and it follows that something like D which existed in A is not present in B and has been replaced by something like E, relying on this fact we can say that "this B is different to A". Therefore A and B both consist of two factors: 1) A stable factor which is common between A and B (C). 2) A factor which belongs to A or B and gets altered in the change (D or E, respectively).

Now, if the stable common factor is the substance of the thing and the changing factors are accidents and features then the change is in the accident (*'araḍ*) and if the stable common factor is a part of the material substance of the thing and the changing factor is another part of the material substance then the change is in the substance of the thing.⁸

⁷ Motahari, *Majmū'a-i āthār*, vol. 6, No 1, p. 802.

⁸ Popkin, and Stroll, *Kolīyyāt-i falsafa*, pp. 149-150.

In fact by justification of the issue of constancy and change, Aristotle reached the conclusion that bodies (*ajsām*) consist of matter (*mādda*) and form (*sūra*). See also: Copleston, *A History of Philosophy*, Vol. 1, No 7, pp. 418-421, and P. 424.

3.2.4. Change in Accident (*'araḍ*) and Change in Substance (*jawhar*)

Change in accident: according to Aristotle and his followers all things in the natural world consist of a substance and some accidents. For example the colour, shape and size of an apple are its accidents and the apple itself is the substance (*jawhar*) that includes the form (*sūra*) and the matter (*mādda*) both of which exist in the apple. Aristotle believed that when change occurs in the accident, its substance remains stable but its accidents and features will change, like when a small apple becomes a big one and a green apple becomes a red one. In this case the apple, that is the substance of the thing, is stable during the change; however, its colour and its size, that is its accidents and features, are changing. So, in this case substance is stable and its accidents have changed.⁹

Change in substance: during change in substance the substance itself is changing, however, the substance consists of two parts, form (*sūra*) and matter (*mādda*). Matter remains stable but form changes, i.e., one form will become nothing and another form will replace the previous form, but the matter is stable for both of the forms. So in these kinds of change, the stable common thing is matter – the first part of substance - and the special changeable part is the form. Therefore, when the substance changes matter remains stable and it is the form that changes.¹⁰

Aristotle believed that each change may occur in an instant (*'ān*) and may have duration; it may take a short or long time. So he divided all changes into two groups, temporal (*zamānī*) and instantaneous (*'ānī*).¹¹

3.2.5. Thoughts on Constancy and Change in Islamic Philosophy

Islamic philosophers before Mulla Sadra, like Ibn Sina and his followers, accepted Aristotle's idea about constancy and change. They admitted changes in accidents

⁹ R. H. Popkin, and A. Stroll, *Kolīyyāt-i falsafa*, pp. 149-150.

¹⁰ Copleston, *A History of Philosophy*, Vol. 1, No 7, p. 436.

¹¹ 'Ubūdīyyat, *Darāmadī bar falsafa-i islāmī*, section 4, pp. 299-302.

and substances too. Like Aristotle they believed that changes in substances are a kind of generation and annihilation (*kawn wa fasād*) and only in the form (*sūra*), rather than matter (*mādda*). They believed that changes in accidents are temporal and a kind of gradual motion. Sadra completely changed the foundations of previous philosophers' ideas about motion. Based on the fundamentality of existence he was able to show that change in substance is not instantaneous and a kind of generation and annihilation, rather it is necessarily temporal and a kind of motion. Then he developed the motion in substances idea and claimed that the entire natural world, even if it seems to be stable in our view, is moving; that is, the natural world is continuously changing which means that all accidents follow their substances in motion. Therefore Sadra denied any stability in the natural world. On the issue of trans-substantial motion he claimed that there is no stable thing in the entire natural world so he revived the idea of Heraclitus. However his claims went further; on the issue of the relation between the changing (*mutaghayyir*) and the permanent (*thābit*) he proves that in a second view he agreed with Parmenides that all things are stable. Hence, Sadra also accepted both constancy and change, which is unique¹² to him.¹³

¹² Aristotle states that in this material world there is change and stability. For example when a piece of wood burns and changes into ash a matter inside both of them remains stable and fixed during the change. Therefore there is something stable which he called matter and a change, i.e. the changing of the wood into ash. However, Mulla Sadra does not accept this theory. He says that there is no stable matter in the material world; all things are in constant change in their matter (*madda*) and form (*sura*). The main reason for this claim is time, which is the fourth dimension of the entire material world. He explains this point with trans-substantial motion. However, regarding the relation between changeable (*mutaghayyir*) and stable (*thābit*) he says that if someone could see from the view of an immaterial issue he would see that the entire material world is stable and there is no motion since from this view there is no time and flowing state. Therefore there is a massive difference between change and constancy in Aristotle's idea and Mulla Sadra's idea. The reason why Sadra's belief is unique to him has been explained in Chapter Four in more detail. See: pp. 121-122 and also pp. 161-164.

¹³ Motahari, *Ḥarikat wa zamān dar falsafa-i islāmī*, vol. 2, kinds of substance changing, pp. 106-109.

3.3. Motion

3.3.1. Introduction

It was usual in the debate on motion for scholars to define motion and then time, because time is an inseparable co-requisite of motion. This is different from the method that we are using, which starts with the issue of time. Our reason for doing this is that all of the alterations which Sadra made regarding change and constancy were based on trans-substantial motion so we will consider trans-substantial motion first. Trans-substantial motion means that the substance is the distance of motion, therefore understanding trans-substantial motion depends on an understanding of the distance of motion and its distinction from the object (*mawḍū'*) of motion which are both prerequisites of motion (*lawāzim-i ḥarika*). Therefore it is necessary for us to explain motion and its prerequisites before trans-substantial motion in this chapter and we will go on to explain trans-substantial motion and its results in Chapter Four. Furthermore a precise understanding of motion depends on an understanding of traversed movement (*ḥarikat-i qat'iya*)¹⁴ and its distinction from the concept of medial movement (*ḥarikat-i tawassutiya*) which are two images of temporal movement. Understanding them requires knowledge of the issues related to time based on a correct understanding of time as a flowing extension. For this reason we will start our debate by explaining extension and its division to stable and flowing.

3.3.2. Time or Flowing Extension

Philosophers have defined time as the measure of motion or variable continuous quantity (*kammīyyat-i muttaṣil-i ghayr-i qār*). We can use the words extension and flowing instead of continuous quantity and variable.¹⁵ It is important to know that

¹⁴ Accepting or rejecting traversed movement leads to accepting or rejecting trans-substantial motion which therefore leads to a considerable difference in a philosopher's point of view of the soul and its related issues. The basic difference between Mulla Sadra's idea and the philosophers who preceded him is that, unlike them, he accepted traversed movement and rejected medial movement.

¹⁵ For more information about nature of time and other ideas about time, see:

extension can be applied to both accidental extensions (*imtidād-i 'araḍī*) and substantial extensions (*imtidād-i jawharī*) but in our case it refers only to accidental extension.

What is the meaning of extension? Intellectually, an extension in its essence is a thing in which exterior hypothetical divisibility (*inqisām-i farzī-i khārijī*) is not impossible¹⁶.

Two things should be explained here. The first is fluidity (*sayalān*) and the second is flowing extension (*imtidād-i sayyāl*). However, before explaining the characteristics of fluidity and flowing extension three points are essential in order to clarify the meaning of these ideas.

The first: Each stable extension (*imtidād-i thābit*) is infinitely divisible if we do not accept the idea of corpora indivisible (*joz'ī lā-yatajazzā*). The corpora indivisible here is that which we cannot divide even intellectually. However, if we do not accept the corpora indivisible we can continue the division to infinity.¹⁷ The parts which remain after division are all of the same material as the whole.

The second: The parts of any extension (*imtidād*) are potential not actual, because the whole and its part are correlative (*mutaḍāyif*), and correlatives are equal in

Motahari, *Ḥarikat wa zamān dar falsafa-i islāmī*, vol. 1, the fourth issue, pp. 51-53; vol. 2, pp. 181-184; vol. 3, pp. 117-128. For arguments to prove time see: Motahari, *Ḥarikat wa zamān dar falsafa-i islāmī*, vol. 2, pp. 184-187; and pp. 190-208.

¹⁶ Two words need to be explained, the first is 'division', and the second 'divisibility'. Division means actual division (*inqisām-i bil-fī'l*) whereas divisibility means possibility of division. For more details see: Motahari, *Ḥarikat wa zamān dar falsafa-i islāmī*, vol. 3, pp. 277-279. See also: 'Ubūdīyyat, *Darāmadī bar falsafa-i islāmī*, pp. 216-218.

¹⁷ The meaning of corpora indivisible is not just that the thing is so little that it is impossible to imagine its division but also that its hypothetical divisibility is impossible. This means that the part can have no extension. Philosophers prove that corpora indivisible in this meaning is impossible so division can continue to infinite, see:

Motahari, *Majmū'a-i āthār*, vol. 5, No. 1, pp. 534-535; No. 3, pp. 536-537; vol. 6, No 1, pp. 765-766; vol. 7, pp. 154-155; vol. 13, pp. 111-114.

Motahari, *Ḥarikat wa zamān dar falsafa-i islāmī*, vol. 1, pp. 32-33; And, pp. 352-354; vol. 3, pp. 360-364.

existence and non-existence, potentiality and actuality. Therefore the parts of an extension are not correlative. The two attributes i.e. whole and part, whether both of them are existent or non-existent, are like a cause and its effect, subject and object, and father-child relationship. It is meaningless to say for example that X is an actual father if there is no actual child. Therefore the relation between two smaller extensions and their main extension is not the relation between actual whole and parts. This is because in extension actual parts have no meaning so we add the word 'hypothetical'.

The third: As mentioned in the first point, the existence of corpora indivisible is impossible, so each extension could be divided to infinity. Conversely it is true to say that it is impossible for two things that have no extension to be next to each other without any space between them. This has been proved by philosophers. They said that the succession of instants (*tatālī-i 'ānāt*) or the succession of instantaneous things or points (*tatālī-i 'ānīāt ya noqāt or tashāfoh-i ānīyāt*) are impossible. All the words have the same meaning. So for philosophers it is wrong to say a line is made up of infinite points.¹⁸

3.3.3. Stable and flowing extensions

In order to understand time it is necessary to explain these two kinds of extensions i.e. stable and flowing extensions. Also, understanding the meaning of motion in substance is based on understanding flowing extension and how it is different from stable extension.

Extensions like length, width and height, that we are all familiar with, are stable extensions (or permanent or subsistent extensions). The characteristic of a stable extension is that it is possible for its hypothetical parts to exist together in actuality at the same time. It is also possible for one to exist without the other. On the other

¹⁸ Ibn Sina (Avicenna), Abū Ali, *Shifā Tabī'yyāt*, vol. 1, section 4, pp. 188-197.

It is mentionable that this is a general idea and all Muslim philosophers have accepted that.

hand, in a flowing extension, its hypothetical parts cannot have an actual existence together.¹⁹ The following example shows us the state of flowing extension.

Imagine a flowing extension like T, and see the two potential parts of it T₁ and T₂. According to our definition T₁ and T₂ cannot exist together. If T₁ exists, T₂ cannot exist so we remove T₂ and T₁ remains. At first we thought the whole of T existed, but because it was flowing, we realized that only T₁ existed and T₂ did not. We can consider T₁ and, since you know it is an extension, a kind of time and a flowing extension too, then we can divide it into T₃ and T₄ and because it is an extension, T₃ and T₄ cannot exist together. Therefore we remove T₄ and leave T₃. Because each remaining part is an extension, the division will continue until infinity. And then what happens? Nothing remains! Is it true to say that time is non-existent and is purely an illusion? No it isn't. It means that in the instant, you are not able to find any time. It shows that time is a transient and flowing entity. Time is a whole: we can imagine its hypothetical parts in an instant, but not its actual parts²⁰. This point can be explained by an example. Imagine a line being drawn on a blackboard, with a blackboard rubber following behind it and rubbing out what has been drawn. During the drawing, what were you seeing? Was it just a point that started to move from A to B? It is true that all the time it appeared to be just a moving point. But on the other hand, it is true to say we were drawing a real line and no-one can deny this.²¹

So, in fact a line has been drawn but unlike a normal line in which all of the parts are present in an instant/at the same time, the whole of this flowing line had duration and each hypothetical part of it existed in the instant. It is hypothetical; this means the line had no actual points. On the other hand this line is a whole, the drawing of which had duration. Time is like this line, each instant is not a part of time. Therefore when we saw that the line T was continuously erased, we were considering just the present. Then we ask, does the whole of the line T exist? The

¹⁹ Motahari, *Ḥarikat wa zamān dar falsafa-i islāmī*, vol. 3, pp. 107-109, and 157-158, and 167-171. Also see: vol. 10, pp. 454-455, and 503-511.

²⁰ 'Ubūdīyyat, *Darāmadī bar falsafa-i islāmī*, pp. 218-221. Also see: Motahari, *Ḥarikat wa zamān dar falsafa-i islāmī*, vol. 3, pp. 275-277, and 279-280.

²¹ 'Ubūdīyyat, *Darāmadī bar falsafa-i islāmī*, p. 220.

answer is no. Does half of the line T exist? No. So we carry on erasing and never stop. Of course, in essence there is no problem with this line on the board being a line: all of its parts may exist together. The problem here is the chalk and the fact that the chalk is removed as soon as it appears on the board. Flowing extension is similar to this line and this explanation. As neither this line nor even a very small part of it can exist together and we get only one hypothetical part of it in each instant of time, neither time nor even a very small part of it can exist together at the same time either, rather we are faced with the present which is an instant and a hypothetical part of time.²²

One possible question which may arise here is whether we can ever experience time as an external reality or not. If this line and its drawing had duration and if at any instant there is no time and no two hypothetical parts can exist together, does this mean that we can never experience time as an external reality? And if we are unable to experience it as an external reality, is it because two parts of time cannot exist simultaneously?

For the answer it can be said that the meaning is not that when one hypothetical part became nothing another hypothetical part separately came into existence. The meaning is that all of these hypothetical parts are joined and organized in one extension, so according to this they are together. It is as if you assume that their not being together is equal to their being separate, which would mean that you are denying the whole, namely time does not exist. In other words it is true that in the instant we have no parts, but that does not mean that time does not have any part. Perhaps in the question it was assumed that anything that does not exist in the instant does not exist at all. Not only is there no proof for this, but there is much proof against it. Therefore an instant has no time, it has only hypothetical parts. Instant from the philosophical point of view is a cutting and limit of time.

All of these themes were a preparation to understanding non-temporal affairs and things related to time.

²² For more details on 'time instant' (*'ān*) as a hypothetical cutting of time not a real cutting of it see: Motahari, *Ḥarikat wa zamān dar falsafa-i islāmī*, vol. 3, pp. 275-277.

Issues Unrelated to Time and Issues Related to Time

3.3.3.1. Issues Unrelated to Time

According to Muslim philosophers the non-temporal is a thing that is not related to time and not related to an instant.²³ They put God and pure immaterial issues (*mujarradāt-i maḥḍ*) in this group. Past, present and future do not apply to these things. So God is non-temporal. So when someone says that God is pre-eternal and post-eternal, the meaning is not that God has a very long and infinite life and however far back you go you cannot find the beginning. This is wrong because we are making God conform to time. Also the meaning is not that God is pre-eternal by virtue of time. Therefore pre-eternity and post-eternity for God are not temporal.²⁴ For God, we are not temporal: our past, present and future are all one for God. Although we are temporal with regard to each other, with regard to God we do not have a past, present and future. Therefore, these things have no relation to time or to an instant.²⁵ We will explain this in more detail in the issue of the relation between stable and variable in the next chapter. We will discuss whether if someone can realize the fourth dimension he can see the whole of a material thing i.e. its past, present and future.

²³ There are some things that are related to time, for example when a pen approaches the wall we may say that the pen encountered the wall at an instant. This encounter is an issue that is related to time because it happened at an instant and an instant is a cutting of time Therefore the instant is also related to time.

²⁴ Motahari, *Majmū'a-i āthār*, vol. 6, pp. 1058-1060.

This statement can be supported if said time is related to material world and if there is no matter then there is no time. We are not able to understand the reality of non material issues since we are limited in the material world.

²⁵ Another pure immaterial (*mujarrad-i maḥḍ*) issue is the intellect, pure immaterial is pure stable and it has no alteration. Because time is a measure of motion and follows motion, pure immaterial is free of time and it is not true to be attributed to time. So we cannot say "it is in so time" or "it is not in so time" or "it is created in so time" or "it has so duration" and even cannot say "it is pre-eternal, post-eternal or everlasting i.e. by virtue of time". For more details about issues unrelated to time see: 'Ubūdīyyat, *Hastī shināsī*, section 27, pp. 376-378.

3.3.3.2. Issues Related to Time

According to Ibn Sina these issues are of two types: 1. Instantaneous things (*umūr-i ānī*). 2) A) Instantaneous temporal things (*'umūr-i daḥī*) or temporal things that are not adapted to time. B) Gradual temporal things (*umūr-i zamānīy-i tadrijī*) or temporal things which are adapted to time.²⁶

- a) Instantaneous things are those which happen in an instant (*'ān*). For example, when the tip of a pen makes contact with a paper the contact happens in an instant. This is called an instantaneous issue.
- b) Temporal things are things which do not happen in an instant. They need time and they are of two kinds. The first are instantaneous temporal things (*'umūr-i daḥī*) or temporal things not adapted to time; and the second are gradual temporal things or temporal things adapted to time.
 - i. Instantaneous temporal things or temporal things not adapted to time are issues that are attributed to time and have duration. Past, present and future are also imputed to them but in such a way that all of them exist at the first instant, and at the second instant etc: time passes but these things remain. All things that we are acquainted with as temporal are like this i.e. our everyday understanding of things is so.²⁷
 - ii. Gradual temporal things or temporal things adapted to time (*umūr-i zamānīy-i tadrijī*) can be explained with an example. Imagine we put a ruler at the edge of a book. This ruler is in conformity with the edge. What is the meaning of conformity here? The meaning is that the first part of the ruler is in line with the first part of the edge of the book, the second with the second, the third with the third and so on. So each part of the ruler conforms exactly with a

²⁶ Ibn Sina, *Shifā, Tabīyyāt*, second essay, chapter 12, pp. 160-163.

²⁷ 'Ubūdīyyat, *Hastī shināsī*, section 27, pp. 351, 352.

part of the book section by section. Now with regard to this example we can define temporal things adapted to time.²⁸

A temporal thing adapted to time is a thing the whole of which in terms of its overall lifetime does not exist at any one moment, but which exists as a whole only over the whole duration of its lifetime. Just as time is flowing, when one part of an object is annihilated another part takes its place; each part is replaced continually with the next part. Temporal issues adapted to time are like this, i.e. the first part of it is at the first part of the time, the second part at the second time, the third part at the third time and so on. So these things are flowing because time is flowing and they are conforming with time. With this explanation we are able to express the meaning of temporal issues adapted to time: a temporal issue adapted to time is a thing, the whole of which we cannot see at once: it has a fluid state.

Therefore according to Ibn Sina temporal issues are of two kinds: the first are temporal non-adapted to time, which henceforth we will call instantaneous or non-adapted to time; the second are temporal issues adapted to time, which are in themselves fluid, and which henceforth we shall call temporal.²⁹

So if I say for example that this pen is temporal, it means this pen has changed billions of times from the time that I came into the room. To be more precise, it continually changes all the time which means that in each moment I see a different pen. However, because they are so similar, I do not perceive the change. This is because time is thus. In other words before understanding temporal issues adapted to time, we may have thought it was the whole of pen that was in my hand and not just a part of it. Now that we see it as temporal, we realize it is not the whole of the pen; it is just a piece (temporal fraction or 'fraction-in-time') of it because the whole of it can be found only in the whole of its lifetime. The pen that is in my hand now is

²⁸ *Ibid*, pp. 350-355.

²⁹ Sadra, *Asfar*, vol. 3, pp. 167-168.

a 'temporal slice' of the whole of the pen and at the next instant will be another one. At each moment it will be annihilated and another 'slice' will replace it.³⁰

3.3.3.3. The terms instant (*'ān*), instantaneous (*'ānī*) and temporal (*zamānī*)

Instant in common parlance is a very small piece of time, but in philosophical terms a cut of time is called an instant or moment, just like a point that is not a part of a line and has no extension is just a cutting of the line, an instant is not a part of time, it is a cutting of time.

Instantaneous is a thing that happens at an instant and has instant occurrence (*'ān-i ḥudūth*) and after that may or may not remain. On the other hand temporal is a thing that continues in time, whether for a short or long time, i.e. it has duration but it does not have instant occurrence (*'ān-i ḥudūth*).³¹

3.4. Kinds of Change

As has already been mentioned, issues related to time were of three types 1) Instantaneous things. 2) Gradual temporal things or temporal things adapted to time. 3) Instantaneous temporal things or temporal things not adapted to time. Similarly, there are three kinds of change. 1) Instantaneous change i.e. 1) Change that is not in time and does not need time. 2) Change that is adapted to time i.e. gradual change (*taghyīr-i tadrījī*). 3) Temporal change that is not adapted to time.

Before an explanation of the types of change we must explain what is meant by motion

The simplest definition for motion is "gradual change". In this definition the two terms i.e. change and gradual are clear but for a precise explanation of gradual

³⁰ For more details about temporal and momentary things, see: Motahari, *Ḥarikat wa zamān dar falsafa-i islāmī*, vol. 3, pp. 30, 280.

³¹ 'Ubūdīyyat, *Darāmadī bar falsafa-i islāmī*, pp. 199-200.

change and the distinction between that and instantaneous change we will provide an example starting with instantaneous change.³²

3.4.1. Instantaneous change

It is better to explain this kind of change with an example.³³ Assume that we want to increase the temperature of water from 10 degrees centigrade to 50. This increase in temperature may be imagined in two ways: instantaneous or temporal. To better understand instantaneous change, imagine that even as we heat the water, the temperature remains fixed at 10 degrees and does not change for ten minutes, when it suddenly becomes 20 degrees. After that, imagine again that the temperature is fixed at 20 degrees for ten minutes, at which point it suddenly changes to 30 degrees, and so on to 50 degrees.

These are instantaneous changes because they happen in an instant and without taking any time: the water loses one state and finds a new state. This kind of change is known as mutation or instantaneous change.

In the above example there were four ten degree mutations and between each mutation there was ten minutes of immobility. We can also make the time span smaller than ten minutes, for example one minute, so there are 40 mutations instead of four mutations i.e. the temperature will change after one minute, not ten minutes. Now imagine that instead of each minute, it is one second i.e. after each second the water temperature changes, so there are 2400 one sixtieth of a degree mutations. So the mutations are much smaller and closer together. Then every time the mutations increase, the immobility between the mutations becomes less and the mutation in temperature becomes smaller. If we continue to increase the mutations does there come a time where there is no mutation and no temporal distance? I.e.

³² There are other definitions of motion which may be more precise than this one i.e. "gradual changing" but the simplest one is gradual change. To find out more definitions about motion see: Sadra, *Asfar*, vol. 3, chapter 10, pp. 20-31. See also: Motahari, *Ḥarikat wa zamān dar falsafa-i islāmī*, vol. 1, pp. 19-24 and 35-39; Motahari, *Majmū'a-i āthār*, vol. 6, No 1, pp.766-767; vol. 13, pp. 855-856.

³³ This example has been taken from the book *Darāmadī bar falsafa-i islāmī* see: 'Ubūdīyyat, *Darāmadī bar falsafa-i islāmī*, pp. 200-202.

when the measure and distance of mutations are zero, if it was possible to reach this point, there would be an infinite number of successive instantaneous changes. However, this is not possible because whatever the increase in the number of mutations, and however small the length of immobility between the mutations, and however small the mutational increase, ultimately each mutation has an extension and there will be a duration of immobility before the next mutation, and by dividing an extension we cannot reach a non-extension. Therefore from instantaneous change we cannot achieve temporal change. We will always be faced with a number of instantaneous changes that are separated by spaces of immobility. In other words, instantaneous change is fundamentally different from temporal change and from immobility. It can never bring about temporal change or motion from successive instantaneous changes. Conversely, we can never arrive at a collection of successive instantaneous changes through analyzing temporal change. Immobility is fundamentally different from temporal change and temporal change is fundamentally different from instantaneous change, and neither of them can replace the other.

3.4.2. Gradual temporal change adapted to time (traversed movement)

The meaning of gradual temporal change adapted to time is a change which has a length of time and duration. In the previous type of change, there were for example billions of changes with the time intervals, but there is another type of change that takes a long time and duration, one hour for example. This is called temporal change adapted to time because the first quarter of it is adapted to the first quarter of its time and half of it to half of its time and so on. So this kind of change intrinsically in itself becomes a flowing extension just as time is a flowing extension. It is a cutting-movement, or to use a better expression this picture (*taṣwīr*) of movement is traversed movement.³⁴

³⁴ Motahari, *Ḥarikat wa zamān dar falsafa-i islāmī*, vol. 1, definition of the medial and the traversed movement, pp. 29-31.

3.4.3. Temporal change not adapted to time (medial movement)

The meaning of medial movement is a change that it is not instantaneous. It takes place over a period of time. It is such that its whole exists in each instant of the motion and at the end will be nothing, like what we said about temporal issues non-adapted to time.³⁵ This kind of temporal change is called medial movement.

A possible question here is whether in fact the thing that exists at all of its moments (time) is stable, just like the pen we mentioned before that was stable, temporal and non-adapted to time. So, what is the difference between temporal stable issues non-adapted to time and temporal change non-adapted to time (medial movement)? If both of them are the same, i.e. the whole exists at each instant in time, why do we say that one is stable and the other is changing?

The answer lies in the definition of medial movement. Philosophers define medial movement as the being of a thing between the beginning (A) and the end (B) of the motion, so that at each point assumed between A and B, it exists neither before that point nor after it, so we can say the being of that thing is between A and B. Now with regard to this definition we can consider that firstly, it exists in each instant of its duration, like temporal issues non-adapted to time (i.e. the pen). Secondly, the temporal issue non-adapted to time is stable but this is change and movement because according to its definition it cannot be at the same place in two successive instants, so at each instant it is not before or after its place, and so on. This is the precise meaning of motion. To summarize, just as when we consider a substance to be a temporal issue non-adapted to time (i.e. the pen) and say it exists at the first moment, the second, the third and so on, and we do not say that the first half of it exists in the first half of its time and the second half exists in the second half of its time, so if we have a change that is not instantaneous, but is temporal in a way that at all of its time it exists, i.e. in the first instant, second, and so on. This kind of change is called medial movement.³⁶

³⁵ Ibid, vol. 1, pp. 29-31.

³⁶ Ibn Sina, *Shifā, Tabīyyāt*, vol. 1, pp. 83-84.

In reality, however, it is difficult to imagine and analyze philosophically the notion of medial movement and man cannot understand it easily. In actual fact our general perception of motion is of medial motion. For example, at the moment my hand is stationary: when I say I move my hand for half a minute and then stop, it means my hand finds a state of motion and after half a minute it loses its state of motion. So if we analyze this motion we see that it is the being of the hand between the beginning and the end of its motion, in the same way that we explained medial movement. This is the picture that people usually have.

However, it is important to know which one of the two movements exists in reality: traversed movement, medial movement or both. Before that, it is important to know that there are not two kinds of motion in the external world, such as for example movement in quantity and movement in quality, which refer to two kinds of movement. What we are talking about is two perceptions of movement i.e. our mind takes the external reality of motion and creates from it two images: a traversed image and a medial image. The external reality behind the two is the same. Therefore the main question is: which picture is the real one, or are they both real? In other words, the question is this: which movement reflects external reality and which does not?³⁷ To answer this question we will try to explain the idea of philosophers before Sadra and then Sadra's idea on this matter in more detail. However first we will explain generation and annihilation, and then we will explore the question more fully.

3.4.4. Generation and annihilation

Generation and annihilation are the same as instantaneous changes, but with regard to substances.³⁸

For example oxygen and hydrogen are two substances that at an instant mix together and make water. Again in an instant the form of the new substance may change, lose its form and find a new form of substance. Therefore substances are

³⁷ Motahari, *Ḥarikat wa zamān dar falsafa-i islāmī*, vol. 3, pp. 332-335.

³⁸ Motahari, *Ḥarikat wa zamān dar falsafa-i islāmī*, vol. 6, p. 760.

stable but in an instant may change into other things³⁹. The name of this kind of change is generation and annihilation and usually people imagine change in this way.

Now that we have recognized all kinds of change, we are faced with the question of whether or not philosophers accept these three kinds of change (cutting, medial and generation and annihilation). In other words, do they also accept instantaneous changes like generation and annihilation and movement? And in movement do they accept traversed or medial movement or both? ⁴⁰

3.5. Ideas of Muslim Philosophers on the Three Kinds of Movement

3.5.1. Ibn Sina (Avicenna)

Ibn Sina and his followers accepted two kinds of motion i.e. medial movement and generation and annihilation. With respect to traversed movement, in his writing he almost denies it. He could not fully deny traversed movement because he realized

³⁹ This example is just to understand better the meaning of generation and annihilation. As mentioned via an example, when one atom of oxygen and two atoms of hydrogen react in an instant to each other, i.e. the same time that mixture was completed the forms (*sūra*) of oxygen and hydrogen were nothing and immediately they formed of water instead, so the changing of oxygen and hydrogen into water is momentary (*'ānī*). However Sadra denies this kind of changing. He claims that there is a gradual change which occurs in a part of time albeit a small piece of time. Then naturally there is a time distance between the time that oxygen was formed and hydrogen became nothing and the time that the water was created. During this time distance the mixture had some states, the states that were between those of oxygen and hydrogen on one side and water on the other side. In other words, between the forms of oxygen and hydrogen and the form of water there is no border and no vacuum, there are some other forms between the two sides, but we do not know what these forms are. Sadra says it could be understood through reasoning (see: Motahari, *Ḥarikat wa zamān dar falsafa-i islāmī*, vol. 3, pp. 106-109.

⁴⁰ For more information about medial movement and traversed movement and which one of the two exist in the external world see: Motahari, *Ḥarikat wa zamān dar falsafa-i islāmī*, vol. 1, definition of medial and traversed movement, pp. 29-31. Also see: vol. 3, pp. 321-325; Motahari, *Majmū'a-i āthār*, vol. 6, pp. 763-765.

that there was some evidence for it, but he definitely accepted the other two kinds of motion, medial movement and generation and annihilation.⁴¹

3.5.2. Abul Hassan Bahmanyār

After Ibn Sina, his student, Bahmanyār expressed a problem regarding traversed movement, and then denied it.⁴² He stated that the image of traversed movement does not have an external reality. In fact in the external world there is medial movement, he said, any motions which we can see in the external world are actually medial movements, but our mind sees them as a fixed traversed movement.

How does the mind see this? The mind takes several images at each moment of motion and keeps them in its memory. Then it understands them in the same manner as an extension like a light that is moving very fast around a circle so we can see a circle of light. It is clear that in reality there is only one light at one point in one moment, so we do not have a circle of light, but because the mind keeps images for a short time, it seems to our mind that the bright points are a continuous circle. Externally there is not a protracted (*mumtad*) thing, there is a mediating state.⁴³

⁴¹ Ibn Sina in his book *Shifā* says, when the mind sees a moving body it will see it with all the points that are with it. The mind will see all the points joined together and see all moments as a whole. But since this frozen picture corresponds to a body extended in space and time as a continuous whole rather than to an actual change, this kind of motion exists only in the mind, see: Ibn Sina, *Shifā, Tabīyyāt*, vol.1, pp. 83-84.

⁴² Abul Hassan Bahmanyār (some sources Daylami) Ājāmī Ādharbāyijānī, known as Bahmanyār (died 1067 AD) was a famous pupil of Ibn Sina. He was a Persian Zoroastrian and consequently his knowledge of Arabic was not perfect. His correspondence with Ibn Sina and his master's answers to his questions were compiled in the book *Mubāḥithāt* (dialogues). His main work, *Ketab al-Taḥṣīl* which summarizes Ibn Sina's logic, physics and metaphysics was written in Isfahan between 1024 and 1037 and dedicated to his uncle, the Zoroastrian Abu Mansūr. Another two of his works are *Risāla fi marātib al mujūdāt* and *Risāla* that is well known as *Māba'd al-Tabī'a*. These two works were translated into German. Beyhaqī also states that he wrote a book on logic and one on music and other works are attributed to him. (Rahman Faḍlī, *Bahmanyār*, Encyclopaedia of Islam. Edited by: P. Bearman, Th. Bianquis, C.E. Bosworth, E. Wan Donzel and W.P. Heinrichs. Brill, 2007.)

⁴³ Bahmanyār, *Al-Taḥṣīl*, pp. 420-421.

It is important to know that this image is not exactly the same as the image of traversed movement, since in this image all the hypothetical parts of extension are finally together, contrary to traversed movement in which it is impossible for the two hypothetical parts of it to be together. Ibn Sina who explains how this image is created in the mind mentioned the difference between this image and the real image of traversed movement. However Bahmanyār does not accept any reality for traversed movement except an inapplicable image for it. After Bahmanyār almost all philosophers rejected traversed movement, since the problem stated by Bahmanyār regarding traversed movement, was not answered satisfactorily.⁴⁴

3.5.3. Fakhr al-Din al-Razī

Razī gives a detailed explanation of Bahmanyār's difficulties and reaches the conclusion that each gradual movement (traversed movement) is impossible⁴⁵. He says that what we see as gradual motion is actually a series of instantaneous things each one existing for a short and intangible time and then becoming nothing then another one gets created instead of it and because we are not able to separate them from each other; it seems to be a gradual motion. Assume that a thing wants to move from point A to point B. According to him this means a thing has been created at point A and for a very short intangible time exists and then becomes nothing and then at a very short distance from point A, another thing is created and replaces the previous thing then the new one remains for a very short intangible time and then becomes nothing and so on. At the end of motion the thing which was created at point B remains. We realize these collections of numerous continual instantaneous

⁴⁴ 'Ubūdīyyat, *Darāmadī bar falsafa-i islāmī*, pp. 277-278.

⁴⁵ Abu Abdullah Mohammad ibn Umar ibn al-Husayn al-Taymi al-Bakri al-Tabaristani Fakhr al-din al-Rāzī (Arabic/Persian) or Fakhruddin-i Rāzī was a well-known Persian Sunni Muslim theologian and philosopher. He was born in 1149 (543 AH) in Ray in Persia (today located in Iran) and died in 1209 (606 AH) in Herat (today located in Afghanistan). He also wrote on medicine, physics, astrology, literature, history and law. He should not to be confused with Rhazes, also known as al-Razi. (G.C. Anawati, *Fakhr al-din al-Razi*, the Encyclopaedia of Islam, 2nd edition, Ed By H.A.R Gibbs, B. Lewis, Ch. Pellat, C. Bosworth et al., 11 vols. (Leiden: E.J., 1960-2002) vol. 2, pp. 751-755.

originatedness (*ḥudūth*) and declines (*zawāl*) in the form of gradual (*tadrīj*) and cuts (*qat'*)⁴⁶.

We have explained the result of the problem not the problem itself. However this is a very powerful and difficult problem which nobody was able to solve until Mir Dāmād and naturally all the philosophers from Bahmanyār until Mir Dāmād denied this kind of motion i.e. traversed movement.

3.5.4. Mir Dāmād

The first person to solve the problem was Mir Dāmād⁴⁷. Before solving the problem he stated a negated answer. He said that if the problem is a true problem then even an image of traversed movement in our mind must be impossible since this image in our mind is a gradual originatedness (*ḥudūth-i tadrījī*) too, just like a line which gets drawn gradually and all of its parts appear instantaneously, but remain together afterwards. Therefore it is possible to imagine the image of traversed movement as a gradual originatedness.

However Mir Dāmād said that if traversed movement is impossible, then it must be impossible to even imagine it but as we showed above it is possible to imagine. The previous philosophers said that any kind of gradual originatedness is impossible (even to imagine). After this negation answer, Mir Dāmād solved the problem by distinguishing between two meanings of beginning (*ibtidā*). He was able to prove that the external existence of traversed movement is not impossible. However Mir Dāmād accepted both kinds of motion and said that both kinds of motion with two aspects can exist in the external reality.

⁴⁶ F. Rāzī, *Sharh-i 'uyūn al-Ḥikma*, Tehran, 1373, part 3, p. 37. For more information about Razi's claim and his arguments about that and the responses to him see: Motahari, *Ḥarikat wa zamān dar falsafa-i islāmī*, pp. 25-34; vol. 3, pp. 334-336; Motahari, *Majmū'a-i āthār*, vol. 13, No 1, pp. 161-163.

⁴⁷ See Chapter 1, reference number 5.

3.5.5. Mulla Sadra

Sadra chose the exact opposite way. He had no doubt that movement exists in the external world.⁴⁸ His main proof was the existence of time. Ibn Sina also realized at the end of the issue of traversed and medial movement that the reality of time cannot be proved by medial movement only.⁴⁹

There are many proofs for the reality of time and Sadra could justify them. Sadra puts forth a very subtle debate in *Asfar* which states that each temporal thing is basically adapted to time. He denies any temporal issue that is not adapted to time and this naturally includes medial movement.⁵⁰ In the debate on motion of *Asfar*, he discusses whether medial movement exists or not. He applies seven powerful arguments against Ibn Sina called violations and confirmations (*naqqḥ-hā wa ibrām-hā*). Sadra said that Ibn Sina was mistaken on medial movement. This is because Sadra himself denies any medial movement.⁵¹ However we can understand from Mulla Sadra's writing that he did not accept the image of medial movement and he did not take this kind of motion seriously. He says in fact that what we have as external motion is an image of traversed movement and not an image of medial movement. Therefore he implicitly rejects the question of medial movement. Consequently Mulla Sadra's point of view is that there is nothing which is temporal and at the same time not adapted to time so that we cannot find all of it at one instant, whether it is called change or not.⁵²

3.5.5.1. Mulla Sadra's Thoughts on Generation and Annihilation

Muslim philosophers before Mir Dāmād, following Aristotle,⁵³ accepted generation and annihilation,⁵⁴ but Sadra believed that it was impossible so he denies temporal changes that are not adapted to time (medial-movement) and instantaneous

⁴⁸ Sadra, *Asfar*, vol. 3, p. 34.

⁴⁹ Ibn Sina, *Shifā, Tabī'iyāt*, vol. 1, pp. 83, 84.

⁵⁰ Sadra, *Asfar*, vol. 7, pp. 329-332.

⁵¹ *Ibid*, vol. 3, section 11, pp. 31-38.

⁵² *Ibid*, vol. 7, pp. 289-297.

⁵³ Copleston, *A History of Philosophy*, vol. 1, P. 436.

⁵⁴ Ibn Sina, *Shifā, Tabī'iyāt*, vol. 1, pp. 98-103.

changes in substance. The result is that there is no change in the exterior world except traversed movement. Therefore basically there is no instantaneous changing. We will continue this debate with the issue of trans-substantial motion in the next chapter.⁵⁵

3.6. To which Category does Motion Belong?

The nature (*māhīyya*) of motion is a problem which has caused many disputes between philosophers. Ibn Sina debated in depth the idea that motion is from the category of, being affected by (*'an yanfa'il*), other philosophers after him accepted his idea until Suhrawardī's time. Suhrawardī said motion is a separate and independent category.⁵⁶ According to Suhrawardī, it is wrong to say that there are ten categories (as Aristotle said) i.e. substance⁵⁷ (*jawhar*), quantity (*kamīyya*), quality (*kayfīyya*), locus (*'ayn*), being in a position (*wad'*), having (*jida*), when (*matā*), acting on (*'anyaf'al*), being affected by (*'an yanfa'il*) and relativity (*iḍāfa*).⁵⁸ Suhrawardī said that there are just four categories i.e. substance (*jawhar*), quantity (*kamīyya*), quality (*kayfīyya*) and attribution (*nisba*). The category of attribution (*nisba*) includes, locus (*'ayn*), being in a position (*wad'*), having (*jida*), when (*matā*), acting on (*'an yaf'al*), being affected by (*'an yanfa'il*) and relativity (*iḍāfa*). After that he adds one category to these four main categories i.e. the category of motion. Therefore from Suhrawardī's point of view there are five categories and motion is one of them.

Sadra firstly shows a kind of acknowledgement with Suhrawardī and Ibn Sina. During an argument he introduces motion as a kind of accident which needs an object of

⁵⁵ Sadra, *Asfar*, vol. 7, pp. 289-297.

⁵⁶ We will explain categories shortly.

⁵⁷ Something which does not require a location to be dependent on in its being is called substance. Contrary to accidents which are always dependent to a substance. For example colour needs a location to be seen at. Body (*jism*) is substance and its colour is accident. In Aristotle's classification there are five types of substance: hyle, form (*ṣura*), body, soul and intellect (*'aql*). In order to understand the reason behind this classification see: Motahari, *Majmū'a-i āthār*, vol. 7, p. 148.

⁵⁸ Aristotle, *Mantiq (logic)*, Dār al-qalam publications, (1980 ad, Beirut), 3 volume, vol. 1, pp. 35-62.

motion (*mawḍūʿ*), but it is clear that this cannot be his real idea, because in many of his writings he insists on the point that motion is not included in any category.⁵⁹ Motion is a manner of being called secondary intelligible (*maʿqūl-i thānī*).⁶⁰ In itself motion it is not a thing in the exterior world; according to Mulla Sadra it is a relative issue (*ʿamr-i nisbī*).⁶¹ However, it is important to know the difference between category and non-category. Category is a thing in the external world. When we say, colour of this body, for example, is an accident (*ʿaraḍ*) and it is a category of quality, it means this body in itself is a thing, and its colour is another thing next to it. So if we say it is a category it means it is a thing next to something else. This is the meaning of category.⁶² Therefore if we say this body has motion, and say motion is a category or say a category consists of motion, it means that this body is a thing and its motion is another thing that occurs to this body and next to it. When Sadra says it is a manner of being he is saying that motion is not a thing. The object has two manners of being, one manner is called motion, and the other is a manner of positiveness (*naḥwiy-i subūt*) of this thing. This does not mean that the body is a

⁵⁹ Sadra, *Asfar*, vol. 3, p. 109.

⁶⁰ The concepts which can be achieved from the comparison between external objects is called philosophical concept or secondary intelligible (*maʿqūl-i thānī*), like the concept of cause and effect, the concept of potentiality and actuality and the like. If we see a pen, for example, the concept of effect cannot be taken, rather if we compare this pen with the company that made it then because the existence of this pen is dependent to this company, our intellect by a comparison can obtain the concept of effect from the pen.

⁶¹ Sadra, *Asfar*, vol. 3, pp. 61, 67, 81, 129, see also: vol. 4, p. 220; Sadra, *ʿArshīyyi*, p. 231; Sadra, *al-Mashāʿir*, p. 65.

⁶² This matter has been mentioned in Aristotle's works in order to classify the existents. Aristotle divides all of the world's existents into substance and accident. He puts all of them into ten categories one of which is substance and the other nine are accidental categories (Aristotle, *Mantiq* (logic), vol. 1, pp. 35-62). Muslim philosophers followed this issue too. Ibn Sina has stated this issue in logic (Ibn Sina, *Shifā, al-mantiq*, Najafī al-Marʿashī publications, (1404 AH, Qom), vol. 1, *al-maqūlāt*, pp. 3-233.) and in philosophy (Ibn Sina, *Shifā, Ilāhīyyāt*, second and third article, pp. 57-152) in full detail. Sadra has only mentioned it in philosophy (Sadra, *Asfar*, vol. 4, vol. 5, 1-194.) and the philosophers after him have followed the same path. For example see: S.M.H. Tabātabāʿeī, *Nihāya al-ḥikmah, al-marḥala al-sādīsa fil-maqūlāt al-ʿashr*, pp. 88-135.

thing and it has an adjective (motion) which is a thing that is added to the body.⁶³ Motion is not a thing, it is the secondary intelligible, it is a relative issue (*'amr-i nisbī*) and an abstractive issue (*'amr-i intizā'ī*). Therefore it is not a category, because it is not a thing.⁶⁴

3.7. Prerequisites of motion (*lawāzim-i ḥarika*)

According to philosophers, including classical Western like Aristotle and also Muslim philosophers such as Ibn Sina, Suhrawardi and Mulla Sadra, when a motion is created, six issues will be created with it: 1) Beginning (*mabda'*). 2) Extremity (*montahā*). 3) Time. 4) Subject or Mover. 5) Susceptible subject (*mawḍū'-i qābil*). 6) Distance (*masāfa*).⁶⁵ We will discuss distance when we come to the question of trans-substantial motion. To provide a better explanation of the matter we must start with an example:

Assume that water starts to move with a gentle gradient from point A and stops at point B after two hours. In this movement we can find out the following things:

1. Point A, that is the beginning of the motion (*mabda'-i ḥarika*).
2. Point B, that is the end of motion (*montahā-i ḥarika*).
3. Water, or more precisely the molecules of water that have motion and are called the moving issue (*mutaḥarrik*) or object of motion.
4. Factor or factors that move water molecules and are called the mover (*muḥarrik*) or the doer of the motion.

⁶³ Sadra, *Sharḥ-i 'uṣūl-i kāfī*, p. 33, see also: Sadra, *Asrār al-'āyāt*, 'anjoman-i islāmī-yi ḥikmat wa falsafī-i Iran publications, (1360 SH, Tehran), pp. 84, 85.

⁶⁴ For more details about secondary intelligible (*ma'qūl-i thānī*) see: M. Fanaei Eshkivari, *ma'qūl-i thānī, An Analytical and Comparative Study on First and Second Intentions in Islamic and Western Philosophy*, published by The Imam Khomeini Education and Research Institute, Iran, Qom, 1997, see also: S. M. Nabavīan, *Mafāhīm-i kollī* (Universal Concepts), The article published in *Ma'rifat-i Falsafī* (A Quarterly Journal of philosophical Inquiry), published by The Imam Khomeini Education and Research Institute, Iran, Qom, Fall & Winter 2003-4, vol. 1&2, pp. 99-107.

⁶⁵ Sadra, *Asfar*, vol. 3, p. 75.

5. Two hours, that is the time of motion.

6. Distance between point A and point B, that is the distance (*masāfa*).

These six factors exist in every motion and there is no motion which does not have these factors. It is the reason why philosophers have called them prerequisites of motion.⁶⁶

3.7.1. Beginning (*mabda'*)

3.7.2. Extremity (*montahā*)

The beginning is the point at which motion starts, and the extremity is the point at which motion stops. There is a subtlety. When someone refers to the beginning and the extremity of motion they usually mean there are two limits of distance. For example if the motion starts from A to B, point A is beginning and point B is the extremity. But actually beginning and extremity are not two limits of motion; they are the beginning and extremity of motion's distance and they are not limitations of motion itself. The beginning of motion is a potentiality of motion (*qowwa*) and its extremity is an actuality of motion (*fi'l*) i.e. for example if the colour of something is yellow and it gradually goes red, this thing has the potentiality to be red in the future before its motion, and will find actual redness at the end of its motion. Therefore the meaning of motion is that a potentiality gradually becomes an actuality.

However, if the change is a kind of instantaneous change then it is not motion, it is generation and annihilation. In the philosophers' words, motion is gradually going from potentiality toward actuality. In other words motion is mediating between potential (*qowwa*) and actual (*fi'l*).⁶⁷

⁶⁶ Ubūdīyyat, *Darāmadī bar falsafa-i islāmī*, p. 211.

⁶⁷ Sadra, *Asfar*, vol. 4, pp. 275-276, see also: vol. 8, pp. 386, 389; Sadra, *Ta'līqī bar hikmat-i ishrāq*, p. 446; Sadra, *Ta'līqī bar Shifā*, vol. 1, pp. 565, 597, 598.

3.7.3. Time (*zamān*)

We have spoken about the reality of time and that it is a flowing extension, and we have also stated that by extension, we actually mean accidental extension not substantial; that is that time is a kind of quantity, a variable continuous quantity (*kammīyat-i muttaṣil-i ghayr-i qār*). Time is a measure of motion. For example the measure of this motion is one or two hours or the like.⁶⁸

One possible question may arise here, namely what is the relationship between the thing that has measure, i.e. body (*jism*), and its measure? Is it true to say that measure itself is one category (*maqūla*) and a body which has this measure is another one, so that when a motion gets created, in fact two things are created in the external world; one is measure of motion and the other is body?

The first person to deny this point was Ibn Sina. He said that it is wrong to say a body is one thing and its measure is another thing next to it; they are not two things that are added together.⁶⁹ The relationship between measure and owner of measure is like the relationship between ambiguous (*mubham*) and determinate (*muta'ayyin*). For example sometimes we may not pay attention to the measure of a body, whether its length is one or two meters. This view is called substance (*jawhar*) or natural body (*jism-i tabīṭ*). But sometimes we may pay attention to its determination which is for example one meter or two meters or more, this is called volume (*ḥajm*) or quantity or geometrical body (*jism-i ta'līmī*)⁷⁰.

Therefore when philosophers say time is the measure of motion, they do not mean that motion is one thing and its time is another thing next to it that takes place (*ḥulūl*) within motion and then motion happens to have this measure. What it actually means is that time and motion are one external reality and if we consider

⁶⁸ This is a well-known definition of time which has been accepted by the majority of philosophers. However for a deeper understanding of the reality of time and other definitions of time see: Motahari, *Ḥarikat wa zamān dar falsafa-i islāmī*, vol. 1, pp. 51-53; vol. 2, pp. 181-184; vol. 3, all ideas about time, pp. 117-128.

⁶⁹ Ibn Sina, *Shifā, al-mantiq*, vol. 1, *al-maqūlāt*, pp. 113, 114.

⁷⁰ Sadra, *Asfar*, vol. 3, p. 106, see also: Sadra, *Risāla fil-ḥudūth*, pp. 53, 54.

this united reality as ambiguous (*mubham*) so that it can be compatible with one hour, two hours, ten hours or eternal and everlasting, then it is called motion. On the other hand if we consider this reality as determinate (*muta'ayyin*) so that it can possess specific determination, then it is called time. Therefore it can be understood from Ibn Sina's words and from philosophers who came after him that they were considering motion and its time as a single reality in the external world.⁷¹

Explanation

According to the philosophers, adjectives or accidents (in philosophical terms) of something (*'avāriḍ-i ašhyā*) are primarily of two kinds. The first is additional attribute of essence (*sifat-i zāyid-i bar dhāt*) and the second is temporal attribute of essence (*sifati 'yn-i dhāt*). They can also be called, external accidents (*'avāriḍ-i khārijī*) and analytic intellectual accidents (*'avāriḍ-i taḥlīlī-i aqliya*).⁷²

The meaning of additional attribute of essence is that, there are two things in the exterior world; one is the locus of adjective (*mawṣūf*) that has a separate reality and the other is adjective that is another reality. In other words, for both locus and adjective, there is an instantiation (*miṣdāq*) in this manner that the reality of the adjective takes place (*'āriḍ*) in the reality of its locus, and then their perception in the mind appears as the adjective and its locus. Ibn Sina and his followers believed that all tangible adjectives of things such as colours, shapes, smells, tastes, sizes and the like are thus. They said that when a body is said to be white, for example, it means that there is something on the outside that is similar to the concept of body, like this wall. Also there is another thing similar to the concept of whiteness and it is called white colour. The colour (white) takes place on the body (wall) on the outside. Therefore we take the concept of white from the concept of whiteness and then we predicate it to the body, then we say: the body is white or the body contains

⁷¹ Sadra also confirms this point and says: "The reality is that occurrence of time to motion is just in our mind and analytic space, since the time and motion as mentioned are two existents which exist by a single existence ..." (Sadra, *Asfār*, vol. 3, pp. 180, 200. also vol. 5, pp. 23-24.

⁷² For more detail of these kinds of adjectives see: Motahari, *Majmū'a-i āthār*, vol. 9, p. 389.

whiteness (body has whiteness). This is called additional attribute of the essence (*sifat-i zā'id bar dhāt*) or external accident (*'avāriḍ-i khārijī*).

However, in some cases, there are no two realities that are in harmony with the adjective and its locus so that one of them takes place within the other. There is just one simple (*basīt*) reality that shows the adjective from one viewpoint and the locus of it from another. In these cases adjectives exist with their locus and not separately. These cases are called temporal attributes of the essence (*sifat-i 'yn-i dhāt*) or analytic accidents. In fact there is no accident (*'āriḍ*) and locus of accident (*ma'rūd*), and it is actually the mind that creates two things from one reality. Muslim philosophers have proved that all God's affirmative attributes are thus.⁷³

Regarding the above themes the thoughts of many philosophers, including ancient Western and Muslim philosophers, differed. Aristotelian philosophers put quantity as a category i.e. quantity is an external accident (*'āriḍ-i khārijī*), that is, additional attributes of the essence (*sifat-i zā'id bar dhāt*), but Ibn Sina's viewpoint on quantity is that quantity is not an external accident, but a kind of analytic accident (*'avāriḍ-i taḥlīliya*) and a temporal attribute of the essence (*sifat-i 'yn-i dhāt*).⁷⁴ The difference between extension of substance, i.e. body (*jism*), and extension of accident i.e. length, measurement and volume returns to ambiguity (*ibhām*) and assigning (*ta'ayyon*). This means that there is one reality which, if considered as ambiguity can be called substance or extension of substance, but if it is considered as assigning it is called length or measurement or volume and all are accidents. Therefore in the words of Ibn Sina, continual quantity has no independent existence from its locus (*ma'rūd*). This issue was introduced by Ibn Sina and was accepted by his followers after him. Then Sadra said all accidents are analytic accidents like quantity.⁷⁵ Time is a continual accident (*kammīyyat-i muttasil*) too. So when we say time is a measure of motion or flowing extension of motion, it means that, according to Ibn Sina, multiplicity of time and motion returns to a mental multiplicity not an external

⁷³ Motahari, *Majmū'a-i āthār*, vol. 5, No. 1, pp. 508-510; vol. 8, pp. 126-128.

⁷⁴ Ibn Sina, *Shifā, al-mantiq*, vol. 1, third article, chapter 4, pp. 113, 114, see also: 'Ubūdīyyat, *Darāmadī bar falsafa-i islāmī*, chapter 13, ref No. 7, pp. 175-176; Sadra, *Asfar*, vol. 3, pp. 90-92.

⁷⁵ Sadra, *Asfar*, vol. 3, pp. 26, 61, 67, 102-103, 104, 109.

multiplicity. Therefore on the outside there is one reality that on the one hand is called motion or fluidity (*sayalān*) and on the other indicates length of motion and its extension and is so called time.

3.7.4. Object of Motion (*mawḍū' yā mutaharrik*)

This issue is one of the most difficult in the debate on motion. Philosophers before Sadra debated this subject at length which is perhaps why there are many diverse words.

The reason why motion needs an object of motion is that motion is an adjective and every adjective needs a locus (*mawṣūf*). This locus is the recipient of motion, just as the body is the recipient of colour and it is usually called motion object (*mawḍū'-i ḥarika*) or moving object (*mutaharrik*) which must be stable during motion.⁷⁶ This object plays two roles. First, it is able to move (*qābil-i ḥarika*) and second, it preserves the unity of motion.⁷⁷ These two roles can be understood from three arguments the first two of which prove object as the recipient of motion (*qābil*) and the third one proves object as the preserver of unity of motion.

3.7.4.1. The first argument

Each adjective (*ṣifa*) needs a subject of qualification (*mawṣūf*) but as mentioned above, there are two kinds of adjectives; the first one is additional attribute of the essence (*sifat-i zā'id-i bar dhāt*) that is an accident. The second is temporal attribute of the essence (*sifat-i 'yn-i dhāt*) that is a manner of being and it is called secondary intelligible (*ma'qūl-i thānī*).

There are two kinds of assumptions about motion; the first one says that it is an accident - as philosophers before Sadra believed - and then it needs a recipient (*qābil*), since every accident needs an object of motion as its location (*makān*) and

⁷⁶ Sadra, *Al-shawāhid al-rubūbiyyah*, published by Bonyādi Sadra, pp. 195, 196.

⁷⁷ Sadra, *Sharḥ-i hidāyat al-'aṣīriyyi*, p. 89.

its recipient (*qābil*).⁷⁸ The second assumption says that it is not additional attribute of the essence (*sifat-i zā'id-i bar dhāt*) it is temporal attribute of the essence (*sifat-i 'yn-i dhāt*) but that the reason this case needs an object of motion is that the essence (*dhāt*), which the concept of motion is taken from its manner of being, needs an object of motion.

It should be said that when we say motion is a temporal attribute of the essence (*sifat-i 'yn-i dhāt*), we must first establish the meaning of essence (*dhāt*).

As we can see, according to Mulla Sadra, essence is the same as distance; motion is an adjective which is the same as distance and has no distinction from it. It can be better explained with an example: If something white gradually changes to black a motion is created; since a change happens gradually, that is motion. The colour was continually changing by this motion. So colour is the same as distance, because distance of motion is a state of a moving object that is continually changing in its period of motion.

Sadra says motion in colour and colour itself are not two different things. According to him motion in colour is a manner of colour's being, so it can be said that motion is an adjective and its reality is the same as the reality of colour. In other words, there are two concepts with one external instance.⁷⁹ The motion needs an object of motion here because it is a temporal attribute of the essence (*sifat-i 'yn-i dhāt*) which is not separate from its object and does not take place within the object of motion so does not need a location. Now with regard to this basis, philosophers before Sadra said that the thing in which motion and gradual change occur needs an object of motion i.e. distance⁸⁰. In other words, these philosophers said that since occurrence of motion is just in accidents and all accidents need an object of motion and as it is also clear that motion is a manner of accidental being, consequently motion needs an object of motion too.

⁷⁸ Ibn Sina, *Shifā, Tabī'yyāt*, vol. 1, second article, chapter 2, p. 93.

⁷⁹ Sadra, *Mafātīḥ al-ghayb*, pp. 389, 390 see also: Sadra, *Asfar*, vol. 3, pp. 187, 188; vol. 7, p. 284.

⁸⁰ Distance is a thing that needs an object, likeness qualities (colours, shapes, warmth), quantity (*ḥajm*), locus (*'ayn*), position (*wad'*). All of those need an object of motion, for example colour needs a place (proposition) otherwise it is not able to exist in the exterior world.

3.7.4.2. The second argument

There is a well-known rule in philosophy which says "each creatable (*hādith*) needs a potentiality (*quwwa*) and a matter (*mādda*) to carry this potentiality"⁸¹, that is, everything which is nothing at the beginning and then comes to existence needs a pre-matter and its existence is impossible without this pre-matter, otherwise everything could be created from everything which is actually impossible. A date tree must be created from a date seed, this potential precedent is called talent (*isti'dād*) of creatable. In other words, there is a relation between a creature and an issue that was called talent before it. And by virtue of this talent each past will have a particular future. Therefore a thing which is created today had a talent in the past to become this being as it is; otherwise it would be impossible for it to be created.⁸²

Philosophers believe that each talent (*isti'dād*) is an accident (*'araḍ*) and accidents need an object of motion called matter (*mādda*) or element (*'unṣor*). But how can this rule, i.e. "motion needs an object of motion", be proved?

It is clear that each motion is a creatable thing (*'amr-i hādith*). Since it was nothing before and then came to existence, perhaps if we analyse motion, it can be understood that reality of motion is gradual originatedness (*hudūth tadriji*), therefore motion is actually the same as originatedness (*hudūth*) and "each creatable (*hudūth*) needs a potentiality (*quwwa*) and needs a matter (*mādda*) to carry this potentiality" so motion requires a pre-matter that is liable to reach its talent. This pre-matter is called the object of motion (*mawḍū'-i ḥarika*).⁸³

3.7.4.3. The third argument

Motion needs a preserver of unity (*hāfiẓ-i waḥda*). To clarify this argument, we need to explain three points:

⁸¹ 'Ubūdīyyat, *Dar 'Āmadī bi niẓām-i hikmat-i sadrā'ej*, vol. 1, Chapter. 6, pp. 286-287.

⁸² Motahari, *Majmū'a-i āthār*, vol. 11, pp. 191-217, see also: Sadra, *Asfar*, vol. 3, pp. 49-56.

⁸³ 'Ubūdīyyat, *Darāmadī bar falsafa-i islāmī*, pp 231-232, see also: Sadra, *Al-Rasā'il*, p. 304; Motahari, *Majmū'a-i āthār*, vol. 11, p. 274.

i. The first point

Assume that a wood burned and became ash; in this example we can say the ash is the same as the wood that has now become ashes i.e. there is an identity between the wood and the ash. Now if someone says the wood completely disappeared and the ash that we can see now is a completely new thing from the previous wood, then there is no relation between them. It is not true, for example, to say this ash here is the same as that iron piece which burned an hour ago in Japan. So any change needs a thing that is the co-relation between its past and future.⁸⁴ It is worth mentioning that in every alteration one thing must be changed and one thing must remain fixed which does not mean that a change has happened but nothing has changed. Therefore any change requires two things; the first one is identity (*in hamānī*). This identity necessarily needs to be able to say that this ash is the same as that previous wood. The second one is differentiation (*in ghayr-i ānī*). This is also necessary because consistency (*qawām*) of any change is based on it.

Now, regarding this point it can be said that if there is no identity, then instead of an alteration (*taghyīr wa tabdīl*) which is actually one change, there are two changes i.e. a thing becomes nothing and then another thing is originated (*hudūth*) in its place. In fact these are two separate and consecutive changes, not one united change. In other words the identity is the preserver of the unity of any change. Therefore, according to philosophers before Mulla Sadra,⁸⁵ in order to have identity, there must be a common factor between the wood and the ashes which was in the previous wood and is also in the current ashes.⁸⁶

Motion is a kind of alteration too (a gradual alteration) so it needs an immovable thing that remains fixed during the motion which is the preserver of the unity of

⁸⁴ Sadra, *Asfar*, vol. 5, p. 269, see also: Sadra, *Al-shawāhid al-rubūbiyyah*, published by Markaz-i Nashr-i dānishgāhi, p. 596.

⁸⁵ Sadra has denied the need for a pre-matter. We will try to explain his idea in this regard, for a better understanding of why he denies this issue see: Sadra, *Asfar*, *Ta'liq-i Tabātabā'eī*, vol. 3, p. 87.

⁸⁶ However according to the second point (differentiation) there must be another factor in the wood which has become nothing and a new thing which is already present in the ashes has replaced it.

motion otherwise it would mean that at any instance something becomes fully nothing and after that a new thing which has no relation to the previous one is created.

In other words if motion has no preserver for its unity, then there are infinite instantaneous things that come to existence in a succession of instants (*tatālīy-i ānāt*) and then become nothing (*ḥādīth wa zāyil*). Therefore instead of a single motion which is one gradual temporal thing there are infinite instances of originatedness (*hudūth*) and annihilation (*zawāl*) and it is actually a denial of motion and follows succession of instantaneous and instants (*tatālīy-i ānāt wa ānīyāt*) which is impossible. Then the presence of a stable thing as the preserver of the unity of motion during motion is necessary. We will talk about this stable thing after the following two points.

ii. The second point

Philosophers before Mulla Sadra, including peripatetic (*Mashāṭ*) and illuminist (*Ishrāqī*) philosophers, accepted that motion had four categories i.e. qualities: (*kayf*), quantity (*kam*), locus (*'ayn*) and position (*waḍ'*). They believed that change in substances is a kind of generation and annihilation (*kawn wa fasād*) not motion.⁸⁷

iii. The third point

According to the philosophers before Mulla Sadra, accidents are simple things (*basīt al-wujūd*) which have no external matter (*mādda*) or form (*sūra*).⁸⁸

iv. Conclusion

The consequence of all these three points is that the distance (*masāfa*) of motion is the only criterion of differentiation (*in ghayr-i ānī*) not the criterion of identity, because as mentioned in the third point, external existence of accident is not made of matter (*mādda*) and form (*sūra*).⁸⁹ Therefore the accident is not able to change during motion. On the other hand, if someone says that accidents are made of

⁸⁷ Ibn Sina, *Shifā, ilāhīyyāt*, vol. 1, pp. 98-103.

⁸⁸ *Ibid*, vol. 1, pp. 98-103.

⁸⁹ As philosophers have said in any change matter is stable and the form changes.

matter and form, it could be said that during the motion of accident, form is continually changing in a way that the first form (*ṣūra*) becomes nothing and the second replaces it and so on, but the matter is stable during the motion. However, according to the second point, accidents (*'arād*) are the distance of motion and based on the first point an accident which is the distance of motion is consistently changing. Therefore the steady factor in motion cannot be accident i.e. the distance of motion. Then the only fixed thing during motion is the substance which is the object of motion of accident (*mawḍū'-'arad*), that is, corporeal substance (*jawhar-'jismānī*). Corporeal substance or object of motion of accident (*mawḍū'-'arad*) is exactly the same as the locus of motion (*muṣūf*) and motion capable (*qābil-'ḥarika*), in other words, object of motion (*mawḍū'-'ḥarika*) or moving (*mutaḥarrik*). The result is that according to philosophers before Sadra the only thing that remains stable and is the preserver of unity of motion is the object of motion (*mawḍū'-'ḥarika*) or movable (*mutaḥarrik*).

The result of all the arguments mentioned above is that one of the following sentences can be the reason why any motion needs an object of motion.

1. Motion is an accident and each accident needs an object (*mawḍū'*) as the locus of motion.
2. Motion is a manner of accident being and following the accidents which have this manner of being motion also needs an object of motion.
3. Motion is creatable (*ḥādith*) and the same as originatedness (*ḥudūth*) which needs a pre-matter. This pre-matter is nothing but the object or locus of motion.
4. A steady thing is needed during the motion as a preserver of the unity of motion and this steady thing is nothing but the object of motion.

We will consider these arguments before proving trans-substantial motion.

3.7.4.4. The Body (*jism*) is the Object of Motion

The object of motion cannot be pure actual (*bil fi'l-'mahḍ*) because pure actual has all of its perfection from the beginning. It therefore has no defect or potential

entelechy. So it does not need to move to find its perfection or remove its defect. It is impossible to move a pure actual thing. So a pure actual cannot be an object of motion. Therefore actual affairs or pure immaterial (*mujarradāt-i maḥḍ*) are not able to move. Pure potential, that is a thing which has no actuality like prime material (*hayūlā*), is not able to be an object of motion as such, since such a thing cannot be movable at all. Then an object of motion must have both potentiality and actuality together. Bodies (*ajsām*) are the only things which are able to have these two features together. Therefore the object of motion in every movement is only body (*jism*). It is body that moves in its colour, its place or in its disposition and etc.⁹⁰

3.7.5. Motion agent (*fā'il*)

Motion is an originated being (*Amr-i ḥādith*) and the same as originatedness (*ḥudūth*) therefore it needs a cause (*'illa*), because origination is the sign of contingency (*imkān*) and given the fact that every created thing (*ḥādith*) is a contingent being and every contingent being needs a cause, so motion needs a cause. This means motion needs a maker (*jā'il*) and creator.⁹¹

3.7.5.1. The division of motion as compared with the mover (*muḥarrrik*)

With regard to the mover (*muḥarrrik*), motion is divided into three categories, natural movement (*ḥarikat-i tabī'ī*), imposed motion (*ḥarikat-i qasrī*) and volitional movement (*ḥarikat-i irādī*). If motion of a thing arises from its nature this is a natural movement but if motion is created by a force opposite to its nature this is called imposed motion and volitional movement includes whatever animate creatures are doing with their will.

⁹⁰ Sadra, *Asfar*, vol. 3, p. 60, see also: vol. 5, pp. 77-125; Ibn Sina, *Shifā, ilāhīyyāt*, p.66; Sadra, *Sharḥ-i hidāya al-athīriyya*, pp. 29, 33-50; Sadra, *Ta'līqī bar shifā*, vol. 1, pp. 274-288; Sadra, *Ta'līqī bar ḥikmat-i ishrāq*, pp. 218, 219; Motahari, *Majmū'a-i āthār*, vol. 5, pp. 541-551.

⁹¹ Sadra, *Asfar*, vol. 5, pp. 111-113.

3.7.6. Distance

The sixth requisite of motion is distance (*masāfa*). It is the category in which motion occurs. Therefore the distance of motion is the variable part of the body which changes during the motion of body.⁹² For example, motion in quantity (*kammīyya*), motion in quality (*kayfīyya*), motion in locus (*lucus*), motion in disposition (*waḍ'*) and the like.⁹³ Now the relationship between these categories and motion must be considered. The meaning of the distance of motion is that during motion in each instant, the moving thing (*mutaḥarrīk*) has only one location that is not before and not after that specific point.⁹⁴

It would be useful to give an example about heat. Heat is a kind of quality. For instance a temperature reaches 60 degrees from 10 degrees in ten minutes. In this example, movable, that is the same as body (*jism*), during its motion - 10 minutes - at each instant (*ān*) has one specific degree (*fard*) of warmth that it did not have before and after, i.e. at this moment, has one degree and in the next moment will have another one etc. Then when it reaches 60 degrees it will be steady. But it is important to know that it is impossible to have two degrees together at one instant.⁹⁵

3.7.6.1. Instantaneous and flowing unit of distance

In this section we will prepare the background for a better understanding of trans-substantial motion. Sadra claims that previous philosophers did not distinguish between the two units (*fard*)⁹⁶ of distance (*masāfa*). They were faced with many difficulties because they assumed that distance has only one instantaneous unit

⁹² 'Ubūdīyyat, *Darāmadī bar falsafa-i islāmī*, section 17, p. 237.

⁹³ There are other ideas about the meaning of the distance of motion too. But they all have some problems. This issue have been discussed in philosophical book under the title "the relationship between motion and categories" see: Sadra, *Asfār*, vol. 3, chapter 22, p. 69. For more explanation about these ideas and their accuracy or wrongness see: Motahari, *Ḥarīkat wa zamān dar falsafa-i islāmī*, vol. 1, pp. 323-332, also 343-347 and, 351-355.

⁹⁴ Ibn Sina, *Shifā, Tabī'yyāt*, vol. 1, p 98.

⁹⁵ 'Ubūdīyyat, *Darāmadī bar falsafa-i islāmī*, chapter. 17, pp. 238-240.

⁹⁶ *Fard* means type or sort but as it is a special term we used 'unit' in the translation.

(*fard-i 'ānī*). However, Sadra believed that the categories in which motion occurs have two units. The first is instantaneous unit and the second is temporal flowing unit (*fard-i sayyāl*) and neither of them could be converted to the other. They are two completely distinct issues and cannot change from one to the other. Now it is important to know the meaning of flowing unit of a category. As the meaning of the issue which is adapted to time was previously explained, the temporal flowing unit is a unit of motion that is adapted to time unlike the instantaneous unit. Everything that is adapted to time has an extension like the extension of time so this thing must have a flowing extension too, since time has a flowing extension. Therefore the flowing unit of a category is a unit that is accompanied by time. For further explanation it must be said that in each instant there is a hypothetical section (*maqta'*) which does not exist in its past nor in its future and in the next instant there is another hypothetical section and so on. These sections are continuous and prolonged; they are not distinct and separate from each other. This is why they are hypothetical, not real. This means there is one protracted unit (*fard-i mumtad*) the whole of which exists on the whole of its motion time, the half of it on half of its motion time and hypothetical section of it, on the hypothetical section of its time and so on.⁹⁷

Instantaneous and flowing units of distance may be better explained with an example. Suppose that we have a green apple whose colour changes to red in four hours, starting at 8 and continuing to move until 12. This means that the apple had a stable colour before 8 i.e. green, but after 8 its colour was different at every moment until it totally turned red at 12 then found a stable colour again i.e. red. The apple had infinite colours during these four hours; it had a colour in one instant and the colour changed by the next instant and so on. None of these colours pair up together, each instant includes a particular colour, however these colours are not separate from each other and appear continuously one after another like a spectrum (*tiyf*) as if there is one spectrum that moves from green to red. So a spectrum of colours occurs in this manner that in each moment just one colour appears and at the next moment, next colour and the whole of the spectrum continuously appeared

⁹⁷ Motahari, *Majmū'a-i āthār*, vol. 6, pp. 754-757; vol. 13, pp. 13, 117, 118.

in the whole of its time period i.e. four hours. Therefore there are two colour units; the first unit is the stable unit which has two colours. The first colour is green before it starts to move and the second colour is red which is reached at the end of the move. Then the colour has become stable in redness.

The second unit of colour is the flowing unit which does not exist fully in each instant, rather the whole of it exists at the time it has fully moved and half of it exists halfway through the time it is moving and a quarter of it exists a quarter of the way through the time it is moving. At each hypothetical instant there is a hypothetical unit of it. Its special state of being is that it has flowing extension but no stable extension. The characteristic of the two units is that neither of them can change into the other i.e. the flowing unit is not able to change into the stable unit. A temporal unit never gets created from an instantaneous unit, because it leads to the succession of instants (*tatāliyy-i ānāt*). The question now arises as to the relation between a flowing unit and an instantaneous unit. Philosophers said that if a flowing unit is cut an instantaneous unit is made, but in fact a flowing unit never gets cut, since if it is cut then that will mean motion has finished and there is no continuous spectrum (*tiyf*) after. So if we say motion has potential instantaneous units, this means that it has no real unit, but if the motion is cut then it will find a real unit.

The philosophers before Sadra did not recognize the flowing unit of motion. They said if motion is cut then it has an actual unit, but if it is not cut, then what is the actual unit of motion? They had no reply to this question.⁹⁸

In fact this matter has appeared in these philosophers' minds because they unwittingly looked at it from a fundamentality of quiddity view which is only compatible with instantaneous units of distance. According to the fundamentality of quiddity -which has been explained in Chapter Two- quiddity is not only a mental image of the external reality; rather it is the same as the external individuated reality. So the unit of a quiddity, which is the same as the external reality that is the instantiation of the quiddity, is the very same as the quiddity which is found in an individuated external form. Therefore the individual occurrence of a category on a

⁹⁸ Ubūdīyyat, *Darāmadī bar falsafa-i islāmī*, chapter. 17, pp. 240-242 and ref No. 10, pp. 259-260.

body means the occurrence of a kind of quiddity from that category on the body. According to this and the meaning of distance, the meaning of motion of a body in a category is that while moving, in every instant, a kind of quiddity which belongs to that category occurs in this body other than the kind of quiddity which occurs in another instant. It is clear that if these actual quiddities are different from each other, then it requires that during the instantaneous succession quiddity of the infinite motion occurs in a body in successive instants which is succession of instants (*tatāliyy-i ānāt wa āniāt*) and that is impossible. Therefore although they exist, they are not actually different from each other but - as Sadra explains in the issue of flowing unit of motion - they are potentially distinct.⁹⁹

However, Sadra says it has a colour unit, rather than an instantaneous colour unit. It has "a four hours colour", a flowing colour to be extended and gradually coming (*hulūl*) into the body (*jism*). The colours are hypothetical parts not actual parts, and the meaning of being potential (*bil quwwa*) for them is that, if this motion is cut then it will find an instantaneous unit.¹⁰⁰

In short Sadra says, the meaning of a motion coming into existence in a category is that before the motion started there was a stable unit of colour and now a flowing unit of colour comes into existence. For example when we say the motion actualized (*mutahaqiq*) in colour, it means that there was a stable and instantaneous unit in the colour of the body until 8 o'clock; from 8 o'clock until 12 o'clock a flowing four

⁹⁹ Sadra, *Sharḥ-i hidāyat al-'athirīyyi*, p. 92. For more details about the issues related to this subject see: Sadra, *al-Mabāḥith al-mashriqīyyah*, vol. 1, p. 565, see also: Sadra, *Asfar*, vol. 1, p. 425; vol. 3, pp. 71, 72.

¹⁰⁰ The fact is that the relationship between the moving object (*mutaḥarrik*) and the distance is only solvable by accepting the flowing and gradual unit of distance and such a unit is also only acceptable on the basis of fundamentality of existence. According to the fundamentality of existence, quiddity is only a mental picture of the external reality, not the reality itself. Based on fundamentality of existence there is only one existence and one reality and according to that only one unit of the category, rather we can abstract infinite quiddities from that existence which has been united. For more details see: Motahari, *Majmū'a-i āthār*, vol. 11, pp. 305-307 and also, pp. 323-327, see also: Sadra, *Asfar*, vol. 9, p. 186; Sadra, *Risāla fil ḥudūth*, p. 82.

hours unit in the body is created. So actualization of motion i.e. actualization of a flowing unit, is the meaning of motion.

3.7.6.2. Unity of Distance, Motion and Time in the External World

As previously mentioned, motion and time are not two separate things in the outside world. Externally there are not two things one of which is called motion and the other called time so that one of them (time) takes place (*ḥulūl*) within the other i.e. motion, while motion in colour occurs in body. This was the belief of philosophers before Sadra about the issue of colour and body.

However, from Mulla Sadra's point of view motion is the same as time on the outside. He says it is just the mind that analyses them as two things, motion (*ṣifa*) and locus of motion (*mawṣūf*).¹⁰¹ In this matter motion, time and distance (*masāfa*) are the very same, because distance also has a flowing dimension. If it is said that a motion occurs externally it means that a flowing unit is created which from the first view is called distance, like red colour in quality, and from the second view is called motion in colour, and from the third view is called length or duration of motion.

Then externally there is just one reality from which three different concepts can be abstracted if considered from different views and therefore it can have three different names.

When we see this reality, for example, without looking at it as flowing or as a thing that continuously comes into existence and then become nothing etc, then the meaning of colour can be abstracted and then we can say this body has colour. However, when our view is that this colour is changing at each moment then the meaning of motion can be abstracted. Finally if we see it as a lengthy issue which has duration, we can say it has time and it is adapted to time.¹⁰²

¹⁰¹ Sadra, *Asfar*, vol. 3, p. 74.

¹⁰² Sadra, *Asfar*, vol. 3, pp. 74, 180, 187, 188, 200, also See: vol. 5, pp. 23, 24; Sadra, *Arshīyya*, p. 231; Sadra, *Ta'liqī bar shifā*, vol. 2, p. 1021.

3.7.6.3. The Meaning of Motion in Substance

Regarding the above explanation, we can understand the meaning of motion in substance. As we have explained, motion in a quality like colour is that before motion there was a stable unit (*fard*) of colour, but now that motion begins there is a flowing unit of colour i.e. there is a unit of colour that is changing at each moment and the whole of it exists in one hour, for example, and half of it in half an hour and the like and is continuous at the same time. Now with the analogy of motion in colour we can understand the meaning of motion in substance, that is, motion in corporeal substance (*jawhar-i jismānī*) or body.

Now the main question in trans-substantial motion is: Is it possible to have a flowing unit of body (*jism*) similar to accidents of body like colour, shape, volume, warmth and measure which can possess two units i.e. a stable unit and a flowing unit which is continually changing at all of its time? Is it possible to have motion in substance? Or is it possible that whole of a body becomes nothing and another one replaces it and at the next moment another one etc? In other words, can a body itself possess a flowing unit? Therefore if the answer is positive, then motion in substance is accepted, otherwise it is not. Now we can understand motion in substance better, but for a more detailed and better understanding we have to express a clear image from trans-substantial motion at the beginning of the next chapter.

3.8. Conclusion

In this chapter the thoughts on constancy and change have been explained and the meaning of motion and time and the issues related to them have been stated.

Then, through precise analysis of the meaning of motion and its components, such as time, object of motion, distance and the like and also by considering the relation between motion, time and distance we were able to conclude that, from the Sadrian point of view, motion in the category of accident means that the flowing unit of that category exists and this means that there is motion in that category. Naturally when Sadra says that there is motion in substance, it means that the substance can also possess a flowing unit. In short, motion in substance means the creation of a flowing unit of substance, either a formal flowing substance, and the existing nature in body

or whole of body with its hyle (*mādda*) and form (*sūra*). Therefore in general, motion in a thing, either a substance or an accident, means that it has a flowing unit. The existence of a flowing unit of that thing means that there is motion in it. We have to consider the motion in substance in particular in the next chapter to prepare ourselves for a better understanding of the soul which is one of the substances in the external world and its motion.